

Victorian Certificate of Education 2008

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

Figures

Words

Letter

PSYCHOLOGY Written examination 2

Thursday 6 November 2008

Reading time: 9.00 am to 9.15 am (15 minutes)

Writing time: 9.15 am to 10.45 am (1 hour 30 minutes)

QUESTION AND ANSWER BOOK

Structure of book

Section	Number of questions	Number of questions to be answered	Number of marks
A	44	44	44
B	22	22	46
			Total 90

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners and rulers.
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or white out liquid/tape.
- No calculator is allowed in this examination.

Materials supplied

- Question and answer book of 18 pages.
- Answer sheet for multiple-choice questions.

Instructions

- Write your student number in the space provided above on this page.
- Check that your name and student number as printed on your answer sheet for multiple-choice questions are correct, and sign your name in the space provided to verify this.
- All written responses must be in English.

At the end of the examination

- Place the answer sheet for multiple-choice questions inside the front cover of this book.

Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic devices into the examination room.

AREA OF STUDY 2 – LEARNING

Question 23

Behaviour due to maturation may be said to be

- A. unlearned.
- B. learned through observation.
- C. learned through trial and error.
- D. a reflex action.

Question 24

Classical conditioning could easily account for how a young child might learn to

- A. walk.
- B. feed himself.
- C. pick up his toys.
- D. fear going to school.

Question 25

In classical conditioning, a conditioned response is

- A. an unlearned reaction to a stimulus.
- B. a learned reaction to a stimulus.
- C. a stimulus that evokes a response.
- D. a previously neutral stimulus that has acquired the capacity to evoke a learned response.

Question 26

Which of the following statements is correct for both classical conditioning and operant conditioning?

- A. both require reinforcement to be given before the desired response
- B. both require reinforcement to be given each time after the desired response
- C. both involve only voluntary responses
- D. both can produce stimulus generalisation and stimulus discrimination

Question 27

Last year Leah went to a psychologist and was cured of her dog phobia. She was able to see a dog without feeling afraid. Yesterday, however, while jogging in the park, she was overcome with a feeling of fear when she saw a woman walking towards her with a dog on a leash.

Apparently Leah's dog phobia

- A. showed spontaneous recovery.
- B. had not been extinguished after all.
- C. showed stimulus discrimination.
- D. showed stimulus generalisation.

Question 28

By today's standards, Watson and Rayner would not meet ethical requirements in their experiment on 'Little Albert' because

- A. an infant was the participant.
- B. they did not inform Little Albert's mother about the nature of the experiment.
- C. they caused distress to the animals they used.
- D. they generalised Little Albert's fear response.

The following information relates to Questions 29, 30 and 31.

When Elijah was a child he spent many happy weekends with his grandmother and they had lots of fun baking scones together. Now whenever Elijah smells freshly baking scones he feels happy.

Question 29

The smell of scones is

- A. an unconditioned stimulus.
- B. an unconditioned response.
- C. a conditioned stimulus.
- D. a conditioned response.

Question 30

The feeling of happiness when Elijah smells the scones is

- A. an unconditioned stimulus.
- B. an unconditioned response.
- C. a conditioned stimulus.
- D. a conditioned response.

Question 31

Having fun while baking scones with his grandmother is

- A. an unconditioned stimulus.
- B. an unconditioned response.
- C. a conditioned stimulus.
- D. a conditioned response.

Question 32

One of the differences between taste aversion and classical conditioning is

- A. taste aversion can be important for survival, whereas classical conditioning is not.
- B. taste aversion is an active process, whereas classical conditioning is passive.
- C. taste aversion will become extinct after only one trial without the unconditioned stimulus, whereas classical conditioning requires repeated trials.
- D. taste aversion can involve a lengthy time lapse between the unconditioned stimulus and the unconditioned response, whereas classical conditioning usually involves a very short time lapse.

Question 33

Gemma enjoys playing with her grandmother's dog. However, Gemma avoids going near her neighbour's dog and she refuses to play with him. The neighbour's dog barked and frightened Gemma on a couple of occasions earlier this year.

Gemma's behaviour demonstrates

- A. extinction.
- B. spontaneous recovery.
- C. discrimination.
- D. generalisation.

Question 34

In Pavlov's experiments, the dog salivated to the sound of a bell.

This indicated that the neutral stimulus had become

- A. an unconditioned response.
- B. a conditioned response.
- C. an unconditioned stimulus.
- D. a conditioned stimulus.

Question 35

According to Pavlov, during acquisition in classical conditioning

- A. the neutral stimulus is paired with the unconditioned stimulus.
- B. the neutral stimulus is paired with the neutral response.
- C. the unconditioned stimulus is paired with the conditioned response.
- D. the unconditioned stimulus is paired with the unconditioned response.

Question 36

An association between a stimulus and a response is strengthened when the response to the stimulus produces satisfying consequences.

This principle is known as

- A. learning set.
- B. the law of effect.
- C. one-trial learning.
- D. observational learning.

Question 37

Edward L. Thorndike used the term _____ to explain learning that was essentially random.

- A. operant conditioning
- B. learning set
- C. vicarious learning
- D. trial and error learning

Question 38

Skinner demonstrated that organisms tend to repeat responses that are followed by favourable consequences.

Skinner termed these favourable consequences

- A. unconditioned stimuli.
- B. rewards.
- C. reinforcements.
- D. learning sets.

Question 39

The Skinner box is

- A. commonly known as the Puzzle Box.
- B. a chamber in which dogs are taught to salivate at the sound of a bell.
- C. a chamber in which animal responses can be recorded and the consequences can be systematically controlled.
- D. a cage in which animals transfer information from previous learning when solving a new problem.

Question 40

Stimulus discrimination is said to occur if the learner

- A. responds to the target stimulus but not any other stimulus.
- B. responds to both the target stimulus and another stimulus.
- C. stops responding to the target stimulus if it is no longer reinforced.
- D. responds in a way that results in the removal of an unpleasant stimulus.

Question 41

Abby works for a book distributor. She gets paid each time she sells her tenth book.

This is an example of a

- A. fixed ratio schedule.
- B. variable ratio schedule.
- C. fixed interval schedule.
- D. variable interval schedule.

Question 42

Which of the following is seen as discouraging bad behaviour instead of encouraging positive behaviour?

- A. positive reinforcement
- B. trial and error learning
- C. negative reinforcement
- D. punishment

Question 43

Bandura is best known for studying the influence of observing the consequences of a model's behaviour on the learning of

- A. cooperative behaviour in children.
- B. aggressive behaviour in children.
- C. cooperative behaviour in adults.
- D. aggressive behaviour in adults.

Question 44

Which of the following best illustrates the use of a learning set?

- A. You find it difficult to understand your friend's point of view because your own opinion is set.
- B. You find it difficult to play netball because you are used to playing basketball.
- C. You have learnt a formula which is now set in your memory.
- D. You are learning how to make a model according to a set of instructions.

END OF SECTION A

AREA OF STUDY 2 – LEARNING**Question 7**

What is the difference between a reflex action and a fixed action pattern?

2 marks

Question 8

Gayle and Luke argued loudly because they both wished to play with the same toy. The noisy argument annoyed their father. Eventually, their father sent Gayle to her room (against her liking) and let Luke happily play with the toy. The noise stopped, which pleased their father.

- a. In terms of operant conditioning, state what type of consequence was received by

i. Gayle

ii. Luke

iii. Gayle and Luke's father

1 + 1 + 1 = 3 marks

- b. Based on the principles of operant conditioning, what is Gayle and Luke's father likely to do when this situation occurs again? Explain your answer.

2 marks

SECTION B – Area of study 2 – continued

Question 9

James used to enjoy his job working in an office. However, for some time, James has been constantly criticised by his supervisor. James now feels anxious whenever he arrives at work.

- a. Name the type of conditioning that has caused James to be anxious whenever he arrives at work.

1 mark

James has started to take sick days to avoid the anxiety. The number of sick days he has taken in the last couple of months has increased. Eventually James telephones his workplace to say he is sick and will not be at work for a week.

- b. What type of reinforcement has occurred to encourage James to take the week's sick leave? Explain your answer.

2 marks

James returns to work after a week at home with no anxiety. Immediately upon arrival at work, he feels anxious.

- c. Is feeling anxious upon his arrival at work an example of spontaneous recovery? Explain your answer.

2 marks

Question 10

Motivation is one of the processes involved in observational learning.

Use an example to explain the process of motivation.

2 marks

AREA OF STUDY 3 – RESEARCH INVESTIGATION

Read the following research study. All the questions which follow relate to this study. Answer all questions.
A researcher asked all the first year Psychology students (100 males and 100 females) from Kookaburra University to participate in a study. Students were offered extra marks in their Psychology final score if they agreed to participate.

Of the 200 students, 40 volunteered for the study (20 males and 20 females). The researcher wanted to investigate whether the memories of first year Psychology students at Kookaburra University were increased by sugar intake.

Prior to the study, informed consent was given and all participants were asked to memorise a list of 20 words (List A). They were then tested on their recall of the words.

The researcher then divided the participants into two groups. For convenience she put the 20 female volunteers into one group (Group 1 – sugar group) and the 20 male volunteers into another group (Group 2 – no sugar group).

Group 1 (sugar group) was given a drink containing sugar. Group 2 (no sugar group) was given a drink that did not contain sugar.

All participants were asked to memorise a different list of 20 words (List B). They were tested again on their recall of the words.

The mean difference in the recall of words across the two lists was calculated. The results are presented in the table below.

	Mean number of words recalled before drink consumption (List A)	Mean number of words recalled after drink consumption (List B)	Mean difference of number of words recalled before drink consumption (List A) and after drink consumption (List B)
Group 1 (sugar) N = 20	15.3	17.6	2.3
Group 2 (no sugar) N = 20	14.9	15.4	0.5

The researcher set a level of significance at 0.05.

A test of significance was calculated and $p < 0.05$.

Participants were debriefed after the study.

Question 11

Write an appropriate aim for this study.

1 mark

Question 12

Write an appropriate operational hypothesis for this study.

2 marks

Question 13

Name the independent variable and the dependent variable in this study.

Independent variable _____

Dependent variable _____

2 marks

Question 14

Identify the population and the sample in this study.

Population _____

Sample _____

2 marks

Question 15

Were the participants in this study randomly selected? Explain your answer.

1 mark

Question 16

Name the experimental research design that was used in this study.

1 mark

Question 17

What is the purpose of List A?

1 mark

Question 18

The researcher used a single-blind procedure. What does this mean for this study?

1 mark

Question 19

Name and define another measure (descriptive statistic) that the researcher could calculate to help summarise the findings for each of the four sets of results.

2 marks

Question 20

Was there a statistically significant difference between the two groups of participants?

1 mark

Question 21

Can the results be generalised to the population? Fully explain the reasons for your answer.

2 marks

Question 22

What ethical standard or consideration was breached by the researcher? Explain how it was breached.

2 marks

GENERAL COMMENTS

Students' overall performance on the November 2008 paper was better than November 2007. Responses to the short answer section achieved marks that were 11 percent higher than in 2007. Multiple-choice responses showed a similar increase.

In contrast to previous years, the scores in the Short answer section (mean 59% correct) were very similar in all three sections: 'Memory' (60.4%), 'Learning' (60%) and 'Research Methods' (58%). In the Multiple-choice section, scores for 'Memory' (81% correct) and 'Learning' (79% correct) were both superior to the 2007 averages, and to those of previous years.

It is noted that in this examination a total of 593 lines were left blank on the students' multiple-choice answer sheets. This is more than the number for November 2007, which indicates a negative trend. Students are encouraged to respond to each question. Not only is it impossible to achieve a mark where no response is given, but the likelihood that later answers on the computer-scored sheet will be out of synchronisation will be increased and further marks may be lost. If unsure, students are again advised to mark the response that is their 'best guess' for any question. It is always possible to change a response by carefully erasing and re-shading.

It is advised that use of a ruler, moved down the page as each question is answered, will help to ensure that the correct response line is being completed.

In the Short answer section, problems again arose in terms of failure to address command terms in questions, or failure to relate the answers to the scenario described in the question. Students appeared to have some difficulty interpreting questions and often did not gain marks due to a lack of precision in their responses. In each of the first two Areas of Study, the mean score on the Multiple-choice section was, as in previous years, substantially superior to the mean score on the equivalent Short answer section.

Marking Policy

As in all previous examinations, a two-mark question will usually require two pieces of information. One mark will usually be given for each part and an answer that does not address both parts cannot achieve full marks. In this examination this applied, for example, to Question 10 of Area of Study 2. In Question 15 of Area of Study 3, students were required both to state whether participants had been randomly selected and to explain this answer in a question that was worth only one mark. Students who did not complete both parts therefore could not achieve any marks.

Almost all questions requiring two parts to an answer showed two separate response spaces on the answer booklet.

This examination contained several questions in which students were required to answer with respect to a certain theory, context or scenario. This applied to Questions 2, 3, 5, 6, 7, 8a, 8b, 9a, 9b, and 9c. In the first two Areas of Study. Similarly, all questions in Area of Study 3 must have been answered with reference to the research study described, as stated in the instructions on the examination paper. Generic answers do not show clear understanding and cannot gain full marks.

SPECIFIC INFORMATION

Section A – Multiple-choice questions

The table below indicates the percentage of students who chose each option. The correct answer is indicated by shading.

Question	% A	% B	% C	% D	Comments
Area of Study 1 – Memory					
1	2	89	6	3	
2	2	1	94	3	
3	75	1	5	19	
4	2	4	2	91	
5	7	10	80	3	
6	3	83	5	9	
7	1	3	8	88	
8	4	94	1	1	
9	12	7	79	3	
10	90	8	2	1	
11	1	92	4	3	
12	78	6	11	5	
13	4	14	8	74	
14	76	21	2	1	
15	86	1	8	5	
16	95	2	3	0	
17	8	2	2	88	
18	9	24	6	61	24% of students chose option B, which would have been a correct response if the question had not clearly stated that this was a healthy elderly person. The inability to learn new material is one of the early signs of dementia.
19	1	84	4	11	
20	5	1	93	1	
21	4	0	93	2	
22	66	8	23	2	23% of students chose option D, indicating that students should learn inequality signs carefully.
Area of Study 2 – Learning					
23	77	10	7	6	
24	6	8	9	77	
25	5	74	3	18	
26	4	10	3	83	
27	89	5	3	3	
28	6	88	1	5	
29	20	2	75	3	
30	1	12	2	84	
31	24	60	6	11	Options A and B were both accepted as correct answers. If 'having fun' was considered to lead to 'feeling happy', then 'having fun' was the unconditioned stimulus. If 'having fun' was the result of 'making scores', then it was the unconditioned response.

2008 Assessment Report

Question	% A	% B	% C	% D	Comments
32	10	22	15	52	Option A – taste aversion can be important for survival, whereas classical conditioning is not. This is obviously an incorrect response. Option B – taste aversion is an active process, whereas classical conditioning is passive. The learning process is passive in both taste aversion and classical conditioning. Option C – taste aversion will become extinct after only one trial without the unconditioned stimulus, whereas classical conditioning requires repeated trials. Taste aversion is, in fact, very resistant to extinction. Option D – taste aversion can involve a lengthy time lapse between the unconditioned stimulus and the unconditioned response, whereas classical conditioning usually involves a very short time lapse.
33	2	1	91	6	
34	3	12	5	81	
35	66	5	17	12	
36	9	81	5	6	
37	7	3	16	74	
38	1	14	83	2	
39	19	1	72	7	
40	89	6	5	3	
41	74	5	19	2	
42	2	1	17	81	
43	4	93	1	2	
44	5	70	12	13	

Responses to Questions 37 to 39 showed that students had difficulty in discriminating the work of Thorndike from the work of Skinner.

Section B – Short answer questions

For each question, an outline answer (or answers) is provided. In some cases the answer given is not the only answer that could have been awarded marks.

Area of Study 1 – Memory

Question 1	Marks	0	1	2	Average
	%	4	11	85	1.8

Typically the capacity of short-term memory is in the range of 7 ± 2 (5–9) items of information. Any range (that is, spread of 2 or more) between 4 and 10 was allowed. In short-term memory, grouping individual items of information together and remembering them as a group is known as chunking.

In a single word answer such as this, other words were not permitted to be substituted for the correct term.

Question 2	Marks	0	1	2	3	Average
	%	7	11	18	64	2.4

Group A would be expected to remember the most events from the film because:

- they would have been assisted by being in the same context as when they saw the film (they had context-dependent cues to assist them). 'Context cues' was a key term in this answer
- it is easier to recognise events from a list than recall them without help (recognition versus recall). The term 'recognition' was a key term in this answer.

2008 Assessment Report

Question 3	Marks	0	1	2	Average
	%	49	35	15	0.7

Definition: Savings score = Amount of time saved when information about the tropical plants is relearned

Formula: $\text{Time taken to learn definitions the first time} - \text{time taken the second time} \times 100$

Time taken the first time

One mark each was awarded for the definition and the formula. 'Trials' did not receive a mark because the question specifically referred to 'time' in the scenario given.

Question 4	Marks	0	1	2	Average
	%	43	35	23	0.8

Both of:

- echoic memory stores impressions of sound for 3–4 seconds for each impression to slightly overlap the next
- 3–4 seconds is long enough for us to be able to link impressions of sound with the next syllable or word we hear, so when we pay attention to them (to transfer them to short-term memory) we are able to make sense of the sounds as a word or the words as a sentence.

OR

This acts as a filter because if the duration was longer, the words would start to overlap and be 'jumbled up' when we paid attention to them.

Few students identified the filter function of echoic memory.

Question 5	Marks	0	1	2	3	Average
	%	13	10	28	49	2.1

Maintenance rehearsal

- repeat notes from the board (sub-vocally) to retain them while you write them down
- repeat a definition over and over again to remember it

Elaborative rehearsal

- link information to a personal experience or personal situation
- ask a question about the information
- create visual images, for example, mind-mapping
- use a mnemonic to add meaning to the information
- think about the meaning of the information

One mark was awarded for each example. Students were asked to give one example of maintenance rehearsal, and two examples of elaborative rehearsal. Two marks were also awarded for two separate and different mnemonics.

Question 6	Marks	0	1	2	Average
	%	41	42	17	0.8

- Transfer of information from short-term memory (STM) to long-term memory (LTM) requires a period of consolidation for permanent storage to occur, as neuronal (physical/chemical/biological, etc.) changes occur (according to consolidation theory). Memory may be lost if this consolidation is disrupted. The concept of neuronal change (or memory trace formation) was critical in this response.
- As Mark kept thinking about the accident and his consolidation of the memory was not disrupted by injury, it is likely that this memory of the accident passed into his LTM. It was important that students identified that the memory was stored in LTM.

2008 Assessment Report

One mark was awarded for each of the above points.

Despite the emphasis in the question, many students answered this question as if Mark had been unable to remember details of the accident. Obviously such responses could not earn marks.

Area of Study 2 – Learning

Question 7				
Marks	0	1	2	Average
%	35	37	29	1

- A fixed action pattern is instinctive but usually involves a complex sequence of responses – a reflex action is a simple response to a stimulus.
- The same reflex action (for example, blinking at a puff of air on the eyeball) may be shown by many different species of animal – fixed action pattern is species specific.

Students achieved two marks for clearly outlining the difference. They needed to clearly state the difference between the two actions, not merely give a vague definition of each or a difference without noting which action is which.

Question 8a.				
Marks	0	1	2	3
%	6	17	20	58

8a.i. Punishment (or response cost)

8a.ii. Positive reinforcement

8a.iii. Negative reinforcement

Question 8b.				
Marks	0	1	2	Average
%	12	20	68	1.6

- He is more likely to repeat the same behavior (sending Gayle to her room and letting Luke play with the toy). This will probably occur after a shorter amount of arguing between his children.
- This will occur because a negative stimulus (the noise) has been removed as a result of his actions, making it more likely that he will repeat the behaviour.

Both parts of this response were required for full marks.

Many students wrote responses indicating that next time he would send Luke to his room – presumably to be fair. In terms of operant conditioning this would be an incorrect response as he is likely to repeat the exact behaviour that brought the desired response.

Question 9a.				
Marks	0	1	2	Average
%	38	62	0.6	

Classical conditioning.

James has started to take sick days to avoid the anxiety. The number of sick days he has taken in the last couple of months has increased. Eventually James telephones his workplace to say he is sick and will not be at work for a week.

Question 9b.				
Marks	0	1	2	Average
%	16	18	66	1.5

2008 Assessment Report

Both of:

- negative reinforcement
- the anxiety is removed when he does not go to work (negatively reinforcing the behaviour of not going to work and making it more likely that he will repeat this behavior.)

Question 9c.				
Marks	0	1	2	Average
%	44	13	43	1

Both of:

- no
- as extinction of the conditioned response of anxiety did not occur.

For extinction to occur, the conditioned stimulus (CS) (arriving at work) must no longer cause the conditioned response (CR) (anxiety due to arriving at work). Spontaneous recovery is the reappearance of the CR after extinction.

Question 10				
Marks	0	1	2	Average
%	58	25	17	0.6

Any appropriate example that illustrated the role of motivation was accepted, including (but not limited to):

- performing a slam dunk in basketball after watching an NBL match
- washing up after dinner having seen your sister being praised for doing so
- putting maple syrup on a pancake after seeing your brother enjoying it.

Motivation needed to be clearly explained. A person is unlikely to reproduce an observed behaviour unless they want to do so. (Motivation is often linked to reinforcement – if you believe reproducing the behaviour will produce positive consequences, then you are more likely to carry it out.)

Motivation must be shown to be the desire to perform the action. Reference to reinforcement was not enough to earn the mark unless it was shown to create this specific desire.

Many students gave examples of motivation to learn, not motivation to perform the behaviour. These answers did not earn marks as this is not the way the term 'motivation' is used in observational learning.

One mark was awarded for the appropriate example that illustrated observational learning. One mark was awarded for a clear explanation of the process of motivation as it related to this example.

Area of Study 3 – Research Investigation

Question 11				
Marks	0	1	2	Average
%	8	92	0.9	

To discover the effects of sugar intake on learning ability

Question 12				
Marks	0	1	2	Average
%	34	46	20	0.9

For first year psychology students from Kookaburra University, learning ability – operationalised as the score on a memory test of 20 words – will be more improved for students who consume a sugary drink than for students who have a drink containing no sugar.

An operational hypothesis is a stated prediction of the outcome of the experiment that includes:

- statement of the population
- statement of the independent variable (IV)
- statement of the dependent variable (DV)
- operationalisation of the dependent variable.

If the independent variable was also continuous, then it would also be operationalised.

A correct response included appropriate operationalisation of the dependent variable and statement of the population, the independent variable and dependent variable.

This question was poorly answered. Students needed to demonstrate their understanding of the concept of operationalisation and their understanding that a hypothesis is a statement of the predicted effect of a change in the independent variable on the value of the dependent variable. A hypothesis cannot be expressed as a question; some students continue to make this error.

Question 13

Marks	0	1	2	Average
%	21	23	56	1.4

- Independent variable: Whether the participants drank a sugary drink or not.
- Dependent variable: Learning ability (or memory) is operationalised as the score on the 20 word test.

OR

Change in learning ability

As this part of the question was worth only one mark, 'learning ability', 'memory' or 'improvement in memory/learning ability' were accepted, although they are not strictly complete answers.

Question 14

Marks	0	1	2	Average
%	32	28	40	1.1

- Population: All first year psychology students from Kookaburra University.
- Sample: The 40 students (20 male and 20 female) who volunteered to take part in the study.

It was not necessary to repeat the reference to the specific university in the description of the sample, as long as it was identified in the description of the population. Many students wrongly identified 'all first year psychology students' or 'students' as the population. The answer needed to contain all identifying details.

Question 15

Marks	0	1	Average
%	33	67	0.7

No. The students were 40 volunteers from the population. This biased the sample towards those who were willing to take part.

Both parts of the response were needed to achieve one mark.

Question 16

Marks	0	1	Average
%	49	51	0.5

Independent groups

Many students wrongly answered 'repeated measures'. This was probably a misinterpretation of the design in which all participants had been tested on word lists on two occasions, so that the change in ability could be measured.

Question 17

Marks	0	1	Average
%	38	62	0.6

To establish a base-line for comparison with the post-drink score, so that change in learning ability could be measured.

Question 18

Marks	0	1	Average
%	32	68	0.7

The participants were not aware of whether they were in the experimental (sugar drink) group or the control (non-sugar drink) group.

Question 19

Marks	0	1	2	Average
%	49	16	35	0.9

- Median: The score that has as many scores above it as below it in the dataset.
- Mode: The most commonly occurring score in the dataset.
- Standard deviation: The mean difference between each score and the mean of all scores.
- Correlation: A scatterplot showing scores on List A compared with scores on List B.

Any other appropriate descriptive statistic was acceptable, for example, variance, range, interquartile range, kurtosis and skew.

Question 20

Marks	0	1	Average
%	23	77	0.8

Yes

Question 21

Marks	0	1	2	Average
%	27	29	43	1.2

No

- Participants were not randomly allocated to groups. With all males in one group and all females in the other, the results were confounded by gender.
- Participants were not representative of the population as all had volunteered.

Any good reason was accepted.

Question 22

Marks	0	1	2	Average
%	34	26	40	1.1

Professional conduct or voluntary participation. The participants were coerced into taking part by being given extra marks for their participation.

Withdrawal Rights. There is no evidence that participants were informed of their rights to leave the experiment at any stage or to have their results eliminated after the completion of the research. This was accepted as correct, though withdrawal rights should be covered in the informed consent procedures that were carried out.